

REMARKS

Claims 9, 10, 12-17, 25, 26, and 28-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Ibbetson et al., U.S. Patent 6,515,313. Applicants note that since Ibbetson did not issue until February 4, 2003, well after the filing date of the present application, a rejection under 35 U.S.C. 102(b) is not appropriate. The Ibbetson rejection is therefore treated as if it were made under 35 U.S.C. 102(e). Applicants respectfully traverse the rejection.

Claim 9 recites an "active region including at least two quantum well layers separated by a barrier layer, wherein one of a quantum well layer and the barrier layer is a graded layer formed from a III-Nitride semiconductor alloy having a composition graded" Ibbetson does not teach such a device. In Ibbetson's examples, the active region has **either** a graded layer (see, for example, Figs. 6A and 6B and column 9, line 63 through column 10, line 45) **or** at least two quantum well layers separated by a barrier layer (see, for example, Figs. 7A and column 10 line 46 through column 11, line 5), **not both**. Ibbetson clearly teaches at column 10, lines 60 and 61 that the quantum well layers and barrier layers in Ibbetson's only example of a device with multiple quantum wells have a constant composition, not a graded composition. Applicants can find no teaching in Ibbetson of a graded layer in the active region in combination with an active region with at least two quantum wells and a barrier. Accordingly, Ibbetson does not teach all the elements of claim 9 and therefore does not anticipate claim 9.

Claim 25 recites an "active region including a plurality of quantum well layers and at least one barrier layer, the barrier layer . . . having an indium mole fraction graded in a direction substantially perpendicular to the first surface of the first semiconductor layer." As described above, Ibbetson teaches an active region having only one of a graded layer and a plurality of quantum wells, not both.

In addition, Applicants can find no teaching in Ibbetson of grading the composition of a barrier layer separating two quantum well layers. As described above, in the only embodiment of the Ibbetson that teaches barrier layers separating multiple quantum wells, both the quantum wells and the barrier layers have a constant composition, not a graded composition. Accordingly, Ibbetson does not teach all the elements of claim 25 and therefore does not anticipate claim 25.

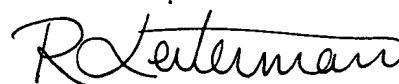
Claims 10 and 12-17 depend from claim 9 and are therefore allowable over Ibbetson for at least the same reason as claim 9. Claims 26 and 28-32 depend from claim 25 and are therefore allowable over Ibbetson for at least the same reason as claim 25. Claims 11 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ibbetson in view of Yano et al, U.S. Patent 6,045,626. Claim 11 depends from claim 9 and claim 27 depends from claim 25. Yano et al. adds nothing to the deficiencies of Ibbetson with respect to claims 9 and 25. Claims 11 and 27 are therefore allowable over the combination of Yano et al. and Ibbetson for at least the same reasons that claims 9 and 25 are allowable over Ibbetson.

In view of the above arguments, Applicants respectfully request allowance of claims 9-17 and 25-32. Should the Examiner have any questions, the Examiner is invited to call the undersigned at (408) 382-0480.

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Respectfully submitted,



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